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on March 10, 2004

Glenn P. Ladwig  
Glenn P. Ladwig, Patent Attorney

INFORMATION DISCLOSURE  
STATEMENT

Examining Group 1614  
Patent Application  
Docket No. UF-304XC2  
Serial No. 10/691,002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Art Unit : 1614  
Applicants : Laurie B. Gower, Matthew J. Olszta, Elliot P. Douglas,  
Sivakumar Munisamy, Donna L. Wheeler  
Serial No. : 10/691,002  
Filed : October 22, 2003  
Conf. No. : 5666  
For : Biomimetic Organic/Inorganic Composites, Processes for Their Production,  
and Methods of Use

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT  
UNDER 37 CFR §§1.97 AND 1.98

Sir:

In accordance with 37 CFR §1.97 and §1.98, the applicants would like to bring to the attention of the Examiner, the references cited in the following patent application:

U.S. Serial No. 10/418,843, filed April 18, 2003.

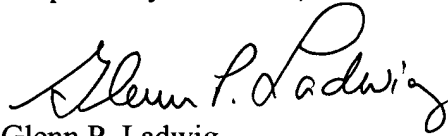
The subject application, Serial No. 10/691,002, claims the benefit under 35 USC §120 of the filing date of patent application Serial No. 10/418,843. The applicants respectfully request that the copies of references supplied in the Information Disclosure Statement of the 10/418,843 application, as well as references cited during the prosecution thereof, be made of record in the 10/691,002 application. As copies of the references filed in the 10/418,843 application, and cited on the attached form

PTO/SB/08, can be found in the 10/418,843 casefile, copies of those references are not provided herewith.

It is respectfully requested that the references cited in the 10/418,843 application be considered in the examination of the subject application and that their consideration be made of record.

The applicants respectfully assert that the substantive provisions of 37 CFR §§1.97 and 1.98 are met by the foregoing statements.

Respectfully submitted,



Glenn P. Ladwig

Patent Attorney

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GPL/mv

Attachment: Form PTO/SB/08 (4 pages)

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# INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet 1 of 4

## Complete if Known

Application Number 10/691,002  
Filing Date October 22, 2003  
First Named Inventor Laurie B. Gower  
Group Art Unit 1614  
Examiner Name  
Attorney Docket Number UF-304XC2

## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	U1	6,201,039	B1	Brown et al.	03-31-2001	All
	U2	5,455,231		Constantz et al.	10-03-1995	All
	U3	5,178,845		Constantz et al.	01-12-1993	All
	U4	4,880,610		Constantz	11-14-1989	All
	U5	4,865,602		Smestad et al.	09-12-1989	All
	U6	4,795,467		Piez et al.	01-03-1989	All
	U7	4,774,227		Piez et al.	09-27-1988	All
	U8	10/243,340		Gower et al. (patent application)	09-13-2002	All
	U9	5,532,217		Silver et al.	07-02-1996	All
	U10	5,273,964		Lemons	12-28-1993	All
	U11					
	U12					
	U13					
	U14					
	U15					
	U16					
	U17					

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
	F1	EP	0 270 254	B1	Smestad et al.	03-10-1993	All	
	F2	EP	0 197 693	B1	Piez et al.	10-23-1991	All	
	F3	EP	0 233 770	B1	Piez et al.	05-09-1990	All	
	F4	WO	03/035127	A1	Japan Sci. and Tech. Corp.	05-01-2003	Abstract	
	F5							
	F6							
	F7							
	F8							
	F9							

Examiner Signature

Date Considered

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<sup>1</sup> Unique citation designation number. <sup>2</sup> See attached Kinds of U.S. Patent Documents. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

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Application Number	10/691,002
Filing Date	October 22, 2003
First Named Inventor	Laurie B. Gower
Group Art Unit	1614
Examiner Name	
Attorney Docket Number	UF-304XC2

Sheet 2 of 4

**NON PATENT LITERATURE DOCUMENTS**

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	R1	ADDADI, L. and S. WEINER "Control and Design Principles in Biological Mineralization" <i>Angew. Chem. Int. Ed. Engl.</i> 1992, 31:153-169.	
	R2	ADDADI, L. <i>et al.</i> "A Chemical Model for the Cooperation of Sulfates and Carboxylates in Calcite Crystal Nucleation: Relevance to Biomineralization" <i>PNAS USA</i> , May 1, 1987, 84(9):2732-2736.	
	R3	ADDADI, L. <i>et al.</i> "Growth and Dissolution of Organic Crystals with 'Tailor-Made' Inhibitors—Implications in Stereochemistry and Materials Science" <i>Angew. Chem. Int. Ed. Engl.</i> , 1985, 24:466-485	
	R4	ADDADI, S. and S. WEINER "Interactions between Acidic Proteins and Crystals: Stereochemical Requirements in Biomineralization" <i>PNAS USA</i> , June 15, 1985, 82(12):4110-4114.	
	R5	AIZENBERG, J. "Patterned crystallization of calcite in vivo and in vitro" <i>J. Crystal Growth</i> , 2000, 211:143-148.	
	R6	BIANCO, P. "Structure and Mineralization of Bone" in <i>Calcification in Biological Systems</i> , Bonnucci, E., Ed., Chapter 11, pp. 243-268, 1992, CRC Press, Inc., Boca Raton, FL.	
	R7	BRADT, J-H. <i>et al.</i> "Biomimetic Mineralization of Collagen by Combined Fibril Assembly and Calcium Phosphate Formation" <i>Chem. Mater.</i> , 1999, 11:2694-2701.	
	R8	CARLSON, S.J. "Vertebrate Dental Structures" in <i>Skeletal Biomineralization: Patterns, Processes and Evolutionary Trends</i> Carter, J.G., Ed., Chapter 21, pp. 531-556, 1990, Van Nostrand Reinhold, New York, NY.	
	R9	DENG, Y. <i>et al.</i> "Study on the three-dimensional proliferation of rabbit articular cartilage-derived chondrocytes on polyhydroxyalkanoate scaffolds" <i>Biomaterials</i> , 2002, 23:4049-4056.	
	R10	DICKINSON, R.B. <i>et al.</i> "Biased Cell Migration of Fibroblasts Exhibiting Contact Guidance in Oriented Collagen Gels" <i>Annals. Biomed. Engin.</i> , 1994, 22:342-356.	
	R11	FRANCILLON-VIEILLOT, H. <i>et al.</i> "Microstructure and Mineralization of Vertebrate Skeletal Tissues" in <i>Skeletal Biomineralization: Patterns, Processes and Evolutionary Trends</i> Carter, J.G., Ed., Chapter 20, pp. 471-530, 1990, Van Nostrand Reinhold, New York, NY.	
	R12	GOWER, L. and D. ODOM "Deposition of calcium carbonate films by a polymer-induced liquid-precursor (PILP) process" <i>J. Crystal Growth</i> , 2000, 210:719-734.	
	R13	GOWER, L. and D. TIRRELL "Calcium carbonate films and helices grown in solutions of poly(aspartate)" <i>J. Crystal. Growth</i> , 1998, 191:153-160.	

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Application Number	10/691,002
Filing Date	October 22, 2003
First Named Inventor	Laurie B. Gower
Group Art Unit	1614
Examiner Name	
Attorney Docket Number	UF-304XC2

Sheet	3	of	4
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	R14	GOWER, L. "The Influence of Polyaspartate Additive on the Growth and morphology of Calcium Carbonate Crystals" Doctoral Dissertation, 1997, University of Massachusetts at Amherst.	
	R15	GREENFIELD, E.M. <i>et al.</i> "Ionotropic Nucleation of Calcium Carbonate by Molluscan Matrix" <i>Amer. Zool.</i> , 1984, 24:925-932.	
	R16	GUIDO, S. and R. TRANQUILLO "A methodology for the systematic and quantitative study of cell contact guidance in oriented collagen gels" <i>J. Cell Sci.</i> , 1993, 105:317-331.	
	R17	JONES, D. and U. WALTER "The Silicate Garden Reaction in Microgravity: A Fluid Interfacial Instability" <i>J. Colloid and Interface Sci.</i> , 1998, 203:286-293.	
	R18	KATZ, E.P. <i>et al.</i> "The Structure of Mineralized Collagen Fibrils" <i>Connective Tissue Res.</i> , 1989, 21:149-158.	
	R19	LANDIS, W.J. <i>et al.</i> "Mineral and Organic Matrix Interaction in Normally Calcifying Tendon Visualized in Three Dimensions by High-Voltage Electron Microscopic Tomography and Graphic Image Reconstruction" <i>J. Struct. Biol.</i> , 1993, 110:39-54.	
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	R21	MANN, S. "Mineralization in Biological Systems" <i>Structure and Bonding</i> , 1983, 54:125-174.	
	R22	MANN, S. "Crystallochemical Strategies in Biomineralization" in <i>Biomineralization: Chemical and Biochemical Perspectives</i> , Mann, S <i>et al.</i> , Eds., Chapter 2, pp. 35-62, 1989, VCH Publishers, New York, N.Y.	
	R23	MURTHY, N.S. "Liquid Crystallinity in Collagen Solutions and Magnetic Orientation of Collagen Fibrils" <i>Biopolymers</i> , 1984, 23:1261-1267.	
	R24	NEHRER, S. <i>et al.</i> "Chondrocyte-seeded collagen matrices implanted in a chondral defect in a canine model" <i>Biomaterials</i> , 1998, 19:2313-2328.	
	R25	OH, Y.R. and O.O. PARK "Transient Flow Birefringence of Calf Skin Collagen Solutions" <i>J. Chem. Eng. Jpn.</i> , 1992, 25(3):243-250.	
	R26	OLSZTA, M.J. <i>et al.</i> "A New Paradigm for Biomineral Formation: Mineralization via an Amorphous Liquid-Phase Precursor" <i>Connective Tissue Res.</i> , 2003, 44(Suppl. 1):326-334.	

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4

of

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	R27	OLSZTA, M. "Biomimetic Mineralization of Collagen for Nanostructured Composites" poster materials, June 2001, Department of Materials Science and Engineering, University of Florida, Gordon Research Conference.	
	R28	SCIADINI, M.F. <i>et al.</i> "Evaluation of Bovine-Derived Bone Protein with a Natural Coral Carrier as a Bone-Graft Substitute in a Canine Segmental Defect Model" <i>J. Orthopaedic Res.</i> , 1997, 15:844-857.	
	R29	SIVAKUMAR, M. and K PANDURANGA RAO "Preparation, characterization and in vitro release of gentamicin from coralline hydroxyapatite-gelatin composite microspheres" <i>Biomaterials</i> , 2002, 23:3175-3181.	
	R30	TRANQUILLO, R.T. <i>et al.</i> "Magnetically orientated tissue-equivalent tubes: application to a circumferentially orientated media-equivalent" <i>Biomaterials</i> , 1996, 17:349-357.	
	R31	TRAUB, W. <i>et al.</i> "Origin of Mineral Crystal Growth in Collagen Fibrils" <i>Matrix</i> , 1992, 12:251-255.	
	R32	TRAUB, W. <i>et al.</i> "Three-Dimensional Ordered Distribution of Crystals in Turkey Tendon Collagen Fibers" <i>PNAS USA</i> , December 15, 1989, 86(24):9822-9826.	
	R33	WEINER, S. <i>et al.</i> "Lamellar Bone: Structure-Function Relations" <i>J. Struc. Biol.</i> , 1999, 126:241-255.	
	R34	WEINER, S. and W. TRAUB "Bone structure: from ångstroms to microns" <i>FASEB J.</i> , 1992, 6:879-885.	
	R35	WEINER, S. and W. TRAUB "Organization of Crystals in Bone" in Mechanisms and Phylogeny of Mineralization in Biological Systems, Suga, S. and Nakahara, H., Eds., Chapter 2.21, pp. 247-253, 1991.	
	R36	ZHANG, R. and P. MA "Poly( $\alpha$ -hydroxyl acids)/hydroxyapatite porous composites for bone-tissue engineering. I. Preparation and morphology" <i>J. Biomed. Mater. Res.</i> , 1999, 44:446-455.	
	R37	ZUND, G. <i>et al.</i> "Tissue engineering in cardiovascular surgery: MTT, a rapid and reliable quantitative method to assess the optimal human cell seeding on polymeric meshes" <i>Euro. J. Cardio-thoracic Surg.</i> , 1999, 15:519-524.	
	R38	KIKUCHI, M. <i>et al.</i> "Preparation of hydroxyapatite/collagen composites using biomimetic process and their biocompatibility" <i>Mat. Res. Soc. Symp. Proc.</i> , 2000, 599:51-53.	
	R39	ROVERI, N. <i>et al.</i> "Biologically inspired growth of hydroxyapatite nanocrystals inside self-assembled collagen fibers" <i>Mat. Sci. Eng.</i> , 2003, 23(3):441-446 (abstract).	

Examiner  
SignatureDate  
Considered

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